ICN R2 Timelines

<table>
<tr><th>Date</th><th>Release /Tag</th><th>Features</th><th>Plan/Status Tracking (Please update your JIRAs and note any issues/road blocks with date stamp)</th></tr>
<tr><td>Aug. 16th</td><td>Initial ICN intermediate release

ICN v.0.1.0

Sprint 1: Aug. 2nd

Sprint 2: Aug. 16th</td><td>Baremetal Operator

BPA controller - Provisioning

BPA RestAPI

New KUD addons plugin
SRIOV
QAT
ROOK
KUD without any offline support</td><td></td></tr>
<tr><td>Oct. 30th</td><td>ICN v.0.2.0

Sprint 3: Sept. 2nd

Sprint 4: Sept. 16th

Sprint 5: Oct. 2nd

Sprint 6: Oct. 16th

Sprint 7: Oct. 30th</td><td>BPA controller software spec (BPA Software CR Specs)

BPA controller cluster</td><td>Itohan Ukponmwan
1st work is to get the software spec and unit testing
If it is not possible move the cluster to the next timeline Oct 15th
<table>
<tr><th>Epic</th><th>JIRA Story</th><th>Sprint/Estimated Completion Date</th><th>Status/Actual Completion Date</th><th>Notes</th></tr>
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<tr><td>~~ICN-9~~ - SSH into provisioning node DONE</td><td>Sprint 1</td><td>Sprint 2</td><td></td></tr>
<tr><td>~~ICN-8~~ - ListAndWatch API for BPA CR and BMH CR DONE</td><td>Sprint 1</td><td>Sprint 1</td><td></td></tr>
<tr><td>~~ICN-36~~ - Ramp up on requirements for Software CRD DONE</td><td>Sprint 3</td><td>Sprint 3</td><td></td></tr>
<tr><td>~~ICN-40~~ - Code implementation for the Software CRD in BPA controller DONE</td><td>Sprint 3</td><td>Sprint 3</td><td></td></tr>
<tr><td>~~ICN-72~~ - Use BPA controller to Get SW CR corresponding to provisioning CR DONE</td><td>Sprint 4</td><td>Sprint 4</td><td></td></tr>
<tr><td>~~ICN-73~~ - BPA controller to ssh into hosts and install software specified in software CR DONE</td><td>Sprint 5</td><td>Sprint 5</td><td></td></tr>
<tr><td>~~ICN-74~~ - Ramp up on Unit Testing in golang DONE</td><td>Sprint 6</td><td>Sprint 6</td><td></td></tr>
<tr><td>~~ICN-75~~ - Update BPA controller code for multi-cluster purpose DONE</td><td>Sprint 4</td><td>Sprint 4</td><td></td></tr>
<tr><td>~~ICN-110~~ - Write code to allow Software CR creation triggers BPA-operator DONE</td><td>Sprint 5</td><td>Sprint 5</td><td></td></tr>
<tr><td>~~ICN-127~~ - Write Code for BPA controller to create KUD jobs using cluster name DONE</td><td>Sprint 5</td><td>Sprint 5</td><td></td></tr>
<tr><td>~~ICN-141~~ - Write Unit testing code for provisioning part of BPA controller DONE</td><td>Sprint 6</td><td>Sprint 7</td><td></td></tr>
<tr><td>~~ICN-158~~ - End to End code for BPA operator baremetal DONE</td><td>Sprint 6</td><td>Sprint 7</td><td></td></tr>
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<tr><td></td><td>Rest API with MinIO</td><td></td></tr>
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Enyinna Ochulor

- Add Unit testing to RESTful API
- Containerizing the ResAPI agent, provide client and server communication
- Add authentication to RESTful API
- Clusterrole, clusterrolebinding and service account
- Expose the RestAPI using Kubernetes Services
  - Expose as the nodeport
- Documentation on the RestAPI
- Possibly Load balancing to next timeline 15th

Epic	JIRA Story	Sprint/Estimated Completion Date	Status/Actual Completion Date	Notes
ICN-4 - Binary provisioning Agent RestAPI agent IN PROGRESS	~~ICN-50~~ - Sample golang Unit test for ICN DONE	Sprint 3	Sprint 3	
	~~ICN-16~~ - Achieve 35% unit test coverage for ICN RESTful API (image.go) DONE	Sprint 5	Sprint 6	
	~~ICN-51~~ - Investigation on the Containerziation of RestAPI DONE	Sprint 4	Sprint 4	
	~~ICN-76~~ - Add authentication to RESTful API DONE	Sprint 4	Sprint 4	
	~~ICN-77~~ - Clusterrole, clusterrolebinding and service account DONE	Sprint 5	Sprint 5	
	~~ICN-78~~ - Expose the RestAPI using Kubernetes Services DONE	Sprint 5	Sprint 5	
	~~ICN-79~~ - Documentation on the RestAPI DONE	Sprint 4	Sprint 4	
	~~ICN-113~~ - Investigate load balancing the ICN RESTful api service DONE	Sprint 5	Sprint 5	
	~~ICN-145~~ - Ramp up on CPU Manager for Kubernetes DONE	Sprint 6	Sprint 6	
	~~ICN-147~~ - Ramp up on Helm Charts and SDWAN DONE	Sprint 6	Sprint 6	SDWAN CNF dependency. Moved to backlog.
	~~ICN-152~~ - Bug Fix (Unit Tests) DONE	Sprint 6	Sprint 6	
	~~ICN-164~~ - BPA RESTful API End To End Testing DONE	Sprint 7		
	~~ICN-165~~ - BPA Code Refactoring (unit testing) DONE	Sprint 7		
	~~ICN-166~~ - Documentation on the RestAPI DONE	Sprint 7		

Tingjie Chen

- Finished the MinIO Client plugin, and follow up the PR for bug fixes and reviews
- Running Mimio in Kubernetes cluster
- Documentation for the Mimio in wiki to run in Kubernetes cluster
- Investigate the storage backend solution for HTTP Server
- Reliable volume for MioIO server export
- Local controllers federation for MinIO deployment

Epic	JIRA Story	Sprint /Estimated Completion Date	Status /Actual Completion Date	Notes
	~~ICN-25~~ - RestAPI Client code integration with Minio DONE	Sprint 3	Sprint 3	
	~~ICN-30~~ - Documentation work for Minio and Rooks DONE	Sprint 3	Sprint 3	
	~~ICN-92~~ - Follow up the PR for bug fixes and reviews DONE	Sprint 4	Sprint 4	Done and finished.
	~~ICN-93~~ - Running Mimio in Kubernetes cluster DONE	Sprint 4	Sprint 4	Finished running standalone MinIO on Kubernetes environment, file patch: https://gerrit.akraino.org/r/#/c/icn/+/1587/
	~~ICN-94~~ - Documentation for the Mimio in wiki to run in Kubernetes cluster DONE	Sprint 4	Sprint 4	Create Wiki for Cloud storage for Local controller: Cloud Storage
	~~ICN-100~~ - Investigate the storage backend solution for HTTP server DONE	Sprint 4	Sprint 4	The Minio deployment with K8s has include the local storage volume and can provision to http server: https://gerrit.akraino.org/r/#/c/icn/+/1587/ PVC: minio-local-claim folder to mount with volume: /mnt/minio
	~~ICN-110~~ - Investigate the reliable volume for MinIO Server deployment DONE	Sprint 7	Sprint 7	Reliable volume for MioIO server export, file patch: https://gerrit.akraino.org/r/#/c/icn/+/1823/ in review
	ICN-120 - Investigate MinIO Server federation for Global controller IN PROGRESS	Sprint 7	NA	Local controllers federation for MinIO deployment, which aim to remote clone, which will postpone to next release.
	ICN-139 - MinIO file upload from original source TO DO	Sprint 7	NA	This for enhancement feature will postpone to next release.
	~~ICN-167~~ - E2E test support for MinIO Cloud storage DONE	Sprint 7	Sprint 7	Sync with Enyinna for E2E test for MinIO cloud storage for REST API Agent, create patch: https://gerrit.akraino.org/r/#/c/icn/+/1839/ and try to integrate, and update icn: 1753 to resolve E2E issues.
	~~ICN-169~~ - Document for MinIO E2E for REST API Agent DONE	Sprint 8		Describe the mechanism to check the object size in MinIO server.
	~~ICN-181~~ - Support for BM e2e testing DONE	Sprint 8		Add the uninstall.sh to clean up the MinIO kubernetes resources to support clean in bare metal, and debug issues for Jenkins with CI/CD.

	OpenWRT initial code for SDWAN with Intel QAT card	Huifeng Le • Presentation on the OPENWRT working • SDWAN configuration in OpenWRT • Working module with SDWAN • Containerizing the SWAN working module and creating rbac tor run on ICN Including QAT is moved to Oct 15th timeline

Epic	JIRA Story	Sprint /Estimated Completion Date	Status /Actual Completion Date	Notes
ICN-40 - SDWAN for ICN R2 release TO DO	~~ICN-41~~ - Investigation on OpenWRT DONE	Sprint3	Sprint3	
	~~ICN-64~~ - Documentation on OpenWRT for Eng meeting DONE	Sprint3	Sprint3	Wiki: ICN - SDEWAN
	~~ICN-96~~ - POC to Setup SDWAN CNF DONE	Sprint4	Sprint5	Blocked in ubus issue when install mwan3 application, reported in openwrt forum for comments: https://forum.openwrt.org/t/run-openwrt-as-container-failed-to-connect-to-ubus/44345 Contact uCPE team for support Manually enable OpenWRT service as workaround
	~~ICN-97~~ - Restful API for SDWAN module DONE	Sprint4	Sprint5	Updated OpenWRT restful API support at ICN - SDEWAN
	~~ICN-103~~ - SDWAN CNF DONE	Sprint5	Sprint5	
	~~ICN-113~~ - Enable MWAN3 app in SDWAN CNF DONE	Sprint5	Sprint5	
	~~ICN-115~~ - Ramp up lua CGI plugin for OpenWRT DONE	Sprint6	Sprint7	
	~~ICN-163~~ - Enable SDWAN test scenarios DONE	Sprint7	Sprint7	

	ONAP in local infra controller	Kuralamudhan Ramakrishnan • Task is to get the ONAP in the local infra controller with multicloud • Running Multiple cluster though bootstrap machine with KUD • Running workload ngnix helm chart in Multicloud region • After Sept 15th have SDWAN Helm chart as well • KUD offline will be covered

Epic	JIRA Stroy	Sprint/Estimated Completion Date	Status/Actual Completion Date	Notes
ICN-121 - ONAP4K8s in ICN TO DO	~~ICN-53~~ - Getting ONAP setup in Infra local controller - Phase 1 DONE	Sprint 3	Sprint 3	
ICN-5 - Kud for ICN TO DO	~~ICN-52~~ - Multi cluster support in ICN stack with KUD DONE	Sprint 3	Sprint 3	
ICN-121 - ONAP4K8s in ICN TO DO	~~ICN-24~~ - ONAP Investigation in Infra global controller DONE	Sprint 3	Sprint 3	
ICN-3 - Binary provisioning Agent controller IN PROGRESS	~~ICN-85~~ - ICN code refactoring DONE	Sprint 4	Sprint 4	
ICN-5 - Kud for ICN TO DO	~~ICN-84~~ - Containerized the KUD for the multi-cluster support DONE	Sprint 4	Sprint 4	
ICN-121 - ONAP4K8s in ICN TO DO	~~ICN-82~~ - Getting ONAP setup in Infra local controller - Phase 2 DONE	Sprint 5	Sprint 5	
ICN-5 - Kud for ICN TO DO	~~ICN-122~~ - ICN v0.2.0 testing and integration DONE	Sprint 5	Sprint 5	
ICN-121 - ONAP4K8s in ICN TO DO	~~ICN-54~~ - Automation script for ONAP integration in ICN stack DONE	Sprint 5	Sprint 5	
ICN-1 - Metal3 Baremetal Operator in ICN Stack IN PROGRESS	~~ICN-136~~ - Metal3 CI integration DONE	Sprint 5	Sprint 5	
ICN-5 - Kud for ICN TO DO	~~ICN-155~~ - ONAP4K8s in ICN DONE	Sprint 6	Sprint 6	
ICN-5 - Kud for ICN TO DO	~~ICN-154~~ - KUD containerized PR DONE	Sprint 6	Sprint 6	
ICN-5 - Kud for ICN TO DO	~~ICN-153~~ - DCM design presentation DONE	Sprint 6	Sprint 6	
ICN-61 - ICN CI / CD works TO DO	~~ICN-156~~ - ICN e2e DONE	Sprint 7	Sprint 7	
ICN-61 - ICN CI / CD works TO DO	~~ICN-157~~ - ICN documentation DONE	Sprint 7	Sprint 7	
ICN-61 - ICN CI / CD works TO DO	~~ICN-176~~ - ICN Release R2 works DONE	Sprint 8		
ICN-61 - ICN CI / CD works TO DO	~~ICN-177~~ - Edgex Foundry testing with ICN CD DONE	Sprint 8		
ICN-1 - Metal3 Baremetal Operator in ICN Stack IN PROGRESS	~~ICN-179~~ - Optimization in ICN installer scripts DONE	Sprint 8		
~~ICN-178~~ - ICN SDL works DONE	~~ICN-178~~ - ICN SDL works DONE	Sprint 8		

	Baremetal VM with BPA controller Provisioning	ramamani yeleswarapu • Get the baremetal server in lab with ICN baremetal operator script • Using KuD install K8s and Virtlet, get the VM created • BPA controller get the IP address from the Virtlet running on the K8s compute cluster • Generate hosts.ini for K8s cluster on VMs • Deploy testing of K8s on VM cluster • Checking the Redfish support in metal3

Epic	JIRA Story	Sprint /Estimated Completion Date	Status/Actual Completion Date	Notes
ICN-1 - Metal3 Baremetal Operator in ICN Stack IN PROGRESS	~~ICN-43~~ - Development lab set up with ICN scripts DONE	Sprint 3	Sprint 3	
	~~ICN-44~~ - Getting Virtlet running in the Compute node DONE	Sprint 3	Sprint 3	
	~~ICN-68~~ - Install K8s cluster on Virtlet VMs DONE	Sprint 3	Sprint 3	Added #101 to the backlog to debug pod networking issue
	~~ICN-86~~ - Getting Itohan code for the BPA controller DONE	Sprint 4	Sprint 4	
	~~ICN-87~~ - Getting list api for the Virlet VM resource DONE	Sprint 4	Sprint 4	#87 and #88 have been tested in independent code.
	~~ICN-88~~ - Automate hosts.ini file from the BPA controller for KUD multi-cluster DONE	Sprint 4	Sprint 4	
	~~ICN-101~~ - Pod network issues on K8s Cluster deployed on Virtlet VMs DONE	Sprint 4	Sprint 4	
	~~ICN-123~~ - List VMs using 'mac address' and cluster vm label and get IP addresses DONE	Sprint 5	Sprint 5	
	~~ICN-125~~ - Create hosts.ini for VM deployment DONE	Sprint 5	Sprint 5	
	~~ICN-126~~ - Launch KuD on Virtlet VMs from autogenerated hosts.ini DONE	Sprint 6	Sprint 6	
	~~ICN-140~~ - Code integration for Virtlet VM support in BPA provisioning controller DONE	Sprint 6	Sprint 6	
	~~ICN-151~~ - Document Virtlet VM Provisioning in BPA DONE	Sprint 7/8	Sprint 7/8	
	~~ICN-160~~ - Unit testing for Virtlet VM provisioning DONE	Sprint 7/8		
	~~ICN-161~~ - Test/debug issues of Virtlet VM provisioning in BPA DONE	Sprint 7	Sprint 7	

CI/CD integration with checkmarx, Akraino recommended tools

Cheng Li

CI/CD

- Jenkins jobs for the all build - 1st Priority
- Load balancing and Fatal fail over mechanism
- Docker repo for ICN - How to use the Intel repo
- Integration CI Travis, Sonar, (AR Kural: Check Akraino code analysis tools)

Epic	JIRA Story	Sprint /Estimated Completion Date	Status /Actual Completion Date	Notes
	~~ICN-62~~ - Documenting ICN CI /CD process in wiki page DONE	Sprint 3	Sprint 3	
	~~ICN-63~~ - Lab set up for jenkins server DONE	Sprint 4	Sprint 5	LinuxFoundation will not create the gerrit account which fits our requirement (Gerrit-Trigger plugin requirement). I has replied the ticket to ask if any other way for integration. https://jira.linuxfoundation.org/servicedesk/customer/portal/2/IT-17441
	~~ICN-66~~ - Jenkins job scripts - Phase 1 DONE	Sprint 4	Sprint 5	
	~~ICN-95~~ - Jenkins job scripts - Phase 2 DONE	Sprint 5	Sprint8	~~No CI code change. Need to reminder the guys who work on metal3 to fix issue if the CI does't pass.~~ Plan changes, we are using Akriano community Jenkins. Need to create jenkins job by following community rule. working on this task...
	ICN-114 - Jira project doesn't exist or you don't have permission to view it.	Sprint6	no need anymore	will not do this one
	~~ICN-118~~ - Jenkins Multiple nodes support DONE	Sprint6	Sprint6	
	~~ICN-182~~ - Jenkins job for pod 11 Jump server DONE	Sprint8	Sprint8	
	~~ICN-183~~ - Jenkins job for PRC server with QAT and NIC card DONE	Sprint8	Sprint8	

Oct 15th

- All PRs will go through Checkmarx, Akraino recommend tools for unit testing and code inspection

Akhila Kishore

- **Ansible playbooks for KuD online - Sept 18**
  - Multus - Done
  - Virtlet - Ritu/ Akhila/ Kural should have a conversation on it. Installer + Daemonset (Manage URL for offline)
  - NFD - Done
  - ISTIO - Already Daemonset in KuD. (Manage URLs for offline mode)
  - OVN4NFV - Ritu Installer + daemonset Done
  - OVN Installer + daemonset (Users APT not Daemonsets) Done
- Update the version of Kubespray on KuD online.

Timeline Oct 18 - KuD online

- SRIOV Installer + daemonset moving this to Sept
  - Ramp up on SRIOV
    - Get lab setup POD with SRIOV capable NIC
  - Installer script for SRIOV
  - Run DaemonSets
  - Test on independent SRIOV capable machine with KuD
- Integrate CPU manager for Kubernetes with KuD - Taking over by Enyinna
  - Ramp-up CPU manager
  - Create Ansible script to integrate CPU manager with KuD
  - Generating test cases
- QAT Installer + daemonset
  - Ramp up on QAT
  - Procure SRIOV + QAT capable machine - If possible by Oct -18. **Moved to November release.**
  - Generate install script with KuD
  - Run DaemonSet yaml
  - Test cases

Epic	JIRA Story	Sprint /Estimated Completion Date	Status /Actual Completion Date	Notes
ICN-6 - KuD V2.0 Addons for ICN IN PROGRESS	~~ICN-46~~ - Ansible playbook for Multus with KuD DONE	Sprint 3	Sprint 3	
	~~ICN-47~~ - Ansible playbook for NFD daemonset in KUD with testing DONE	Sprint 3	Sprint 3	
	~~ICN-20~~ - Update the version of Kubespray in KuD live DONE	Sprint 3	Sprint 3	
	~~ICN-80~~ - Ramp up on SRIOV DONE	Sprint 4	Sprint 4	
	~~ICN-81~~ - NFD Daemonset reviews DONE	Sprint 4	Sprint 4	
	~~ICN-83~~ - Ansible playbook to install SRIOV drivers on KuD DONE	Sprint 5	Sprint 5	In progress; 80% done. requested Kural for Machine with correct NIC card in OPNFV POD. Received credentials to Huifeng's testing machine temporarily for SRIOV ramp-up
	~~ICN-116~~ - Integrating SRIOV Daemonset with KuD online DONE	Sprint 5	Sprint 5	
	~~ICN-117~~ - Testing SRIOV DONE	Sprint 5	Sprint 5	
	ICN-134 - KuD offline support assist TO DO	Sprint 6	Dropped for this release	
	~~ICN-137~~ - Ramp up QAT Device plugin project to integrate with KuD DONE	Sprint 6	Sprint 6	
	~~ICN-140~~ - SRIOV reviews DONE	Sprint 6	Sprint 7	In progress 50% complete
	~~ICN-168~~ - CI test for KuD add ons DONE	Sprint 7	Sprint 7	Start date 10-23
	~~ICN-170~~ - Installer script runs the KuD test cases before the pods are fully up. DONE	Sprint 7	Sprint 7	
	~~ICN-171~~ - Architecture documentation for KuD. DONE	Sprint 7	Sprint 7	
	~~ICN-172~~ - Testing Documentation for add-ons DONE	Sprint 7/8	Sprint 7/8	In progress.
	~~ICN-184~~ - Update SRIOV playbook to match the new device requirements DONE	Sprint 8	Sprint 8	awaiting reviews

Huang Haibin

- Get offline with Apt local repo, https servers, Docker registry
- Offline ansible-playbook(Kud Vars)
- Kural AR: Add Haibin to the OPNFV pod.

Epic	JIRA Story	Sprint/Estimated Completion Date	Status/Actual Completion Date	Notes
	~~ICN-42~~ - Test the Kubespray 2.10.4 and Kube version v1.14.3 DONE	Sprint 3	Sprint3	
	~~ICN-59~~ - Script for offline ICN bootstrap Http Server DONE	Sprint 4	Sprint4	
	~~ICN-105~~ - Running Http server in container DONE	Sprint4	Sprint4	
	ICN-60 - Script for offline Docker registry in boot strap machine IN PROGRESS			Lower offline script work priority
	ICN-99 - Follow up for bug fix and changes for the HTTP Server PR IN PROGRESS			Lower offline script work priority
	ICN-138 - Running Docker Registry in container TO DO			Lower offline script work priority
	ICN-162 - QAT Kernel deployment IN PROGRESS	Sprint 7	Sprint 7	

Igor Duarte Cardoso

- Ramp on the golang
- Ramp on K8s - Kubeadm setup
- Controller, Operator SDK ramp
- Get the already running Tenant controller
- Documentation and presentation on the proposal in ICN wiki page
- Including the tenant resource quota for ICN

Epic	Story	Sprint/Estimated Completion Date	Status/Actual Completion Date	Notes
~~ICN-104~~ - ICN Multi tenancy DONE	~~ICN-56~~ - Getting K8s setup with Kubeadm DONE	Sprint 4	Sprint 4	
	~~ICN-57~~ - Running Sample Controller DONE	Sprint 4	Sprint 4	
	~~ICN-98~~ - Ramp on the Multi-tenancy proposal DONE	Sprint 4	Sprint 4	
	~~ICN-132~~ - Ramp-up on multi-tenancy kubernetes-sig DONE	Sprint 5	Sprint 5	

Dashboard

John Hinman

- Ramp on the golang
- build Dashboard, log on
- connect remotely
- determine whether dashboard allows control of baremetal node CRs
- add baremetal CR interface, if not already present
- Launch Ironic CR with dummy setup
- Add Documentation pages to wiki for Installation, Architecture

Epic	Story	Sprint/Estimated Completion Date	Status/Actual Completion Date	Notes
ICN-70 - Akraino ICN Dash board IN PROGRESS	~~ICN-89~~ - Modified the Kube dashboard for Bootstrap cluster DONE	Sprint 5		
	~~ICN-90~~ - Golang rampup DONE	Sprint 4		
	~~ICN-91~~ - Launch the Ironic CR with dummy setup with local k8s cluster DONE	Sprint 5		
	~~ICN-150~~ - wiki Documentation DONE	Sprint 7		